

## THE REPRODUCTIVE HEALTH AND THE DYNAMICS OF MORTALITY: AN STUDY AMONG HIMACHALIES OF MANALI DISTRICT

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### ABSTRACT

*The study reveals the various aspects of reproductive behaviour and mortality among Himachalies of a village Chachoga situated in the Manali district of Himachal Pradesh. It is based on the entire population of the village living in only 120 households. The paper presents that the male population is outnumbered by the female one. The age & sex composition of the population indicates that the general age groups are in higher frequency consequently which increases the dependency ratio in the population. Various other socioeconomic factors are also taken into account the trends of the fertility, morbidity and mortality elaborates certain aspects of genetic inference however crude rate of natural increase is found relatively high among them.*

### Introduction

The main aim to study population structure is to know at what rate a population is increasing or decreasing (Harrison & Boyce, 1972). The effects and relationship between population to its region and national variations, such as agriculture, industrial development and environment. Each population has its own and unrepeatable structure but there are some structures which resemble each other to a certain extent. However, this can be certain populations, specially the neighbouring ones, between them there are biological and cultural similarities in their structure. These two factors are very closely inter-related because social organisation is a function of social behaviour and this in a way biologically regulated in a certain species. A population can be recognised in its three major components: - 1. Demographic, 2. Social, 3. Genetical. The definition of population for demographic purposes as defined in dictionary is "that branch of Anthropology which treats the statistics of birth, death and diseases etc." On the other hand demographic structure in terms of patterns of Fertility and mortality, emigration and the effect of these on age and sex composition are of vital concern when considering the dynamic of a population.

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In addition to systematic evolutionary processes, demographic factors like age, sex, size of population, sex ratio, the nature of mating pattern, differential fertility, mortality and morbidity etc. certainly influence the genetic composition of the population (*Harrison and Boyce 1972*).

The social components of a population are studied by the said anthropologists and the sociologists. Social anthropologists study the way a society works. The position occupied by the individuals (Ascribed & Achieve & Status), who are trained for a certain role to do the required work.

The attention has been given by physical anthropologists to the genetic components of population or the factors which determine the way of genes are organised. Most physical anthropologists today interpret both long term human evolution and on going through biological differentiation of local population in terms of the changes in the gene frequencies, mutation, selection of gene flow (migration), genetic drift and selective mating and also the biological fitness which is best measured by the intrinsic rate of increase, which can be calculated if age, specific birth and death rates are known (*Cavalli Sforza/Bodmer, 1971*).

The study of population dynamics with the help of mathematical models in relation to demographic structure had been proposed and elaborated by *Fisher (1930)*, *Haldane (1972)* and *Wright (1931, 1943 and 1946)*. *Crow (1961)* interpreted the Fisher's fundamental theory of natural selection using demographic data and proposed the index of opportunity for selection, which was later, modified by *Johnston and Kensinger (1971)*. *Nag (1972)* studied sex, culture and human fertility in India and United States.

The studies on population composition also confirm the existence of variety in demographic structures. Such studies were established by *Ghosh (1976)*, *Pingle (1983)*, *Reddy and Malhotra (1988)* which may be mentioned.

The other notable theoretical statements in demographic studies have come from the works of *cavalli-sforza and Bodmer (1971)*, *Johnson (1993)*, *Swenson et al. (1993)*, *Wen (1993)*, *Miller (1994)*, *Amin et al.(1994)* and others.

### **Aims and Objectives**

The main purpose of collecting demographic information through door to door survey was to find out the functioning of the various demographic processes among the Himanchalies of village Chachoga (Manali, H.P.). An attempt was made to see the distribution of this population by age, sex, marital status, literacy, etc. and to examine certain fertility and mortality differentials so as to understand the population dynamics.

### **The Area and People**

Manali is a major resort place beyond Kullu in the Kullu valley. Set amidst lovely forests of towering cedars, circled by snowy peaks and the unending roar of the Beas as a constant companion, Manali also offers unparalleled opportunities for trekking, rock climbing, angling, and winter sport. Manali, popularly known as the "Queen of Hills", is a beautiful spot in the midst of Pine trees, with high mountains all around it.

The geographical location of Manali is 32°13'–32°15'N & 77°05'–77°10'E. Average altitude is 2050 meters above sea level and area covered 5.12 square kilometres. Population is approximately 0.26 lakh and people converse mostly in Hindi and Pahari.

Manali is situated in the north Indian hill state of Himachal Pradesh. If we consider the physiography of the area, then not only Manali but the whole state consists of hills and mountains ranging at an elevation from 450 mts. to 6500 mts. It situated at the Northern end of the Kullu valley with its spectacular views of the snow-capped peaks and wooded slopes, the Beas rushing along its rocky course amid grassy wild flowered meadows, is ideal for tourists and adventure sport lovers. This region consists of different types of soils such as Reddish Brown, Dark reddish brown and Brown forest soil etc. The climate of Manali is very cold as it is located in the Himalayas and the snow line is not far from the place. Snow remains from December to March, and in January and February cold northerly winds keep temperatures low which ranges from 4°C to 30°C.

The main forest types distinguished are: lower altitude coniferous forest (up to 2,500m), dominated by *Cedrus deodara* and the blue pine *Pinus wallichiana*, in the lower Manalsu Valley: higher altitude oak forest (2,300-3,200 m), dominated by *Quercus semecarpifolia*, *Abies pindrow* etc. Some 149 species of birds have been recorded from the Manali area. Species of larger mammals have been recorded in the Manali area. These include *Rhesus macaque*, *Himalayan Blackbear*, *Leopard*, *Snow leopard* etc.

Although Hindi is the state language but people mostly converse in Pahari. There are various dialects of Pahari that is spoken in different regions like as in Manali, Manali is the dialect.

Winter and rainy season are periods when the activity in fields lowers down. But even during this time, stitching, weaving and knitting is done and baskets and mats are made. The first investment after land is in livestock. Women who tend the animals in the forest and at home do most of the animal husbandry. A woman's life is extremely busy from early morning to late night. She has to work hard at home, take care of the children and prepare food for the family.

The Himachalies have their unique and varied styles of dressing, eating, handicrafts, dialects and customs. They are extremely festive people and quite fond of dancing and singing. The flute is their favourite instrument. Being spiritual minded, these people revere all things and always make an offering to the gods. Himachaly people are very hardworking, simple, honest and that is why crime rate is very low.

### **Materials & Methods**

The unit for demographic data was considered to be a household. The total households of entire village Chachoga covered which were 120. The village population was rural but correct estimation of age was generally a problem. Most mothers remembered the month and year of the birth of their children. In some cases, the spacing between two successive births helped to clarify the present age of the person. At times, age was calculated with the help of historical events, which may have occurred during the past year, especially in the case of elderly people.

Most of the data were collected through interviews, through a process of communication, face to face with the family members of all households of the village. The interview schedule puts the whole information in a structured form.

### **Results**

The data collected under study is presented as below into a definite form to yield meaningful conclusions:

**Age & Sex Composition:** Survey reveals that the population comprises 48.67% males and 50.49% females. These figures give sex ratio of 951 males per thousand females. This preponderance of females over males may be due to various biological, cultural, psychological and ecological factors.

It is noted that a fifteen fold division of the population under a study by four year interval reveals the highest percentage of males in the age group, *i.e.* 10-14 years, while minimum percentage is seen in the age group of 44-69 years, where the maximum percentage of females occurs in the age group of youngsters, *i.e.* 15-19 years and minimum percentage in the age group of 64 & above.

Age composition of population is product of birth, death and migration rates that have operated over a period of three to four generations. It is a record of effect of historical events during the life time of the living number of a population.

A careful study reveals the highest percentage of the people fall in the youngsters age group *i.e.* 10-14 years of age and that of the lowest percentage

of the people in the age group of 65-69. But there is no gradual decline or increase with the age groups. The higher percentage of population in the age group of 10-14 (12.14%) years reveals that the younger generation will be easily won over new and modern way than older generations. But there is a gradual decrease in percentage of population also seen from 30-49 years age groups.

**Table 1**  
**Distribution of Population by Age & Sex**

<i>Age Group</i>	<i>Freqcy. of Male</i>	<i>% of Male</i>	<i>Freqcy. of Female</i>	<i>% of Female</i>	<i>Total Freqcy.</i>	<i>Total %</i>
1	2	3	4	5	6	7
0-4	23	3.87	38	6.40	61	10.28
5-9	34	5.73	20	3.37	54	9.11
10-14	40	6.74	32	5.39	72	12.14
15-19	29	4.89	42	7.08	71	11.97
20-24	31	5.22	40	6.74	71	11.96
25-29	26	4.38	39	6.57	65	10.95
30-34	30	5.05	18	3.03	48	8.08
35-39	21	3.54	20	3.37	41	6.91
40-44	13	2.19	11	1.85	24	4.04
45-49	9	1.51	13	2.19	22	3.71
50-54	18	3.03	10	1.68	28	4.71
55-59	-	-	11	1.85	11	1.85
60-64	6	1.01	3	.50	9	1.51
65-69	3	.50	2	.33	5	0.83
70+	6	1.01	5	.84	11	1.85
Total	289	48.67	304	50.49	593	100.00

**Dependency Ratio:** The nature of the population can be understood by calculating dependency ratio, which means per cent load of dependent populant (0 to 14 + 60+...) on the working group (15 to 59 years age group). It is estimated to 55.64 which means more persons are in working age group.

**Family Size:** As seen in Table 2, the household composition data of the present study reveals that about one fourth of the households (26.66%) had 4 members per house & about one fourth households (25.8%) have the five members per house. There are many households in which the number of members exceeds 8, but the means household size was worked out to be 4-5 persons. This appears to be a characteristic of the Himachaly family living arrangement.

Therefore 63.33% nuclear families found in my survey, but there are 30% extended families also which reveals the character of Himachalies families. Only 5% joint families are found and 1.66% non-familial households were

recorded. Non-familial household are not the characteristics of these people but this is merely due to chance.

**Table 2 (A)**  
**Distribution of Household by Family Members, i.e. Size of the Family**

No. of members in a family	1	2	3	4	5	6	7	8	9	10+	Total
Frequency of Households	3	5	15	32	31	14	11	7	-	2	120
Percentage of Households	2.6	4.16	12.5	26.7	25.8	11.6	9.16	5.84	-	1.66	100.0

**Table 2 (B)**  
**Types of Families Among Himachalies**

<i>Types of Families</i>	<i>Frequency</i>	<i>Percentage</i>
Nuclear Families	76	63.33
Extended Families	36	30.00
Joint Families	6	5.00
Non-familial household	2	1.66
Total	120	

**Table 3**  
**Marital Status of the Himachalies people**

<i>Age Grp. (in yrs)</i>	<i>Unmarried</i>				<i>Married</i>				<i>Widow/Widower</i>				<i>Divorced</i>	
	<i>M</i>	<i>F</i>	<i>Total</i>	<i>%</i>	<i>M</i>	<i>F</i>	<i>Total</i>	<i>%</i>	<i>F</i>	<i>M</i>	<i>Total</i>	<i>%</i>	<i>M</i>	<i>F</i>
0-4	23	38	61	10.28	-	-	-	-	-	-	-	-	-	-
5-9	36	21	57	9.61	-	-	-	-	-	-	-	-	-	-
10-14	37	35	72	12.14	-	-	-	-	-	-	-	-	-	-
15-19	26	24	50	8.43	3	15	18	3.03	-	-	-	-	-	-
20-24	7	13	20	3.37	24	29	53	8.93	-	-	-	-	-	-
25-29	1	2	3	0.50	25	36	61	10.28	-	-	-	-	-	-
30-34	1	-	1	0.16	29	17	46	7.75	-	-	-	-	-	-
35-39	-	-	-	-	21	21	42	7.08	-	-	-	-	-	-
40-44	-	1	1	0.16	13	10	23	3.87	-	-	-	-	-	-
45-49	-	-	-	-	10	11	21	3.54	1	-	1	0.16	-	-
50-54	-	-	-	-	16	8	24	4.04	2	1	3	0.50	1	-
55-59	-	-	-	-	-	4	4	0.67	7	-	7	1.18	-	-
60-64	-	-	-	-	6	1	7	1.18	2	-	2	0.33	-	-
65-69	-	-	-	-	2	-	2	0.33	2	1	3	0.50	-	-
70+	-	-	-	-	2	1	3	0.50	4	4	8	1.34	-	-
Total	131	134	265	44.65	151	153	304	51.20	18	6	24	4.01	1	-

**Marital Status:** Family is the basic unit of every type of human population. An organised level fairly comes into being with the marriage. In Himachaly Population, child marriage is not practised. The mean age of marriage for females lies between 20-24 years and for males 25-29 years. Out of the total population of 593 souls, 44.65% are unmarried and rest of the population, *i.e.* 51.20% are married and 3.03% are widows. Below the age of 50 years and above 20 years approximately every individual is married. The peak of the married person (10.28%) is in the age group of 25-29 years.

**Frequency of Marriage:** There are only 6 persons who have married twice and only one person who have married thrice, rest are married only once. Second marriage was performed due to the death of one partner and unfit. There is no male currently living with two wives. Thus, bigamy is almost non-existent.

**Table 4**  
**Frequency of Marriage (Number of Marriage)**

<i>Particular</i>	<i>Once</i>	<i>Twice</i>	<i>Thrice</i>
Male	142	6	1
Female	149	-	-
Total males	23.94	1.01	0.16
% Females	25.12		

**Frequency of Couple per households:** This study indicates that 62.50% households are with one couples living. 20.84% households with two couples and 10.00% households with three couples per house. These show the nuclear families are the characteristics of Himachalies.

The high percentage of nuclear families show that Himachalies believe in nuclear family.

**Table 5**  
**Frequency of Couple per Households**

Frequency of Couple	0	1	2	3	4	5+	Total
No. of Households	4	75	25	12	2	2	120
Percentage	3.34	62.50	20.84	10.00	1.66	1.66	100.00

**Educational Status:** In Literacy Standard 72.69% population is literate and that of only 27.31% are illiterates still they can read and write to some extent. This show a high educational level in Himachalies Population.

It was observed that a larger proportion of the population was engaged in business (various type of business mainly woollen cloth merchants and

hotel business) and labour work. In some families women also are engaged in their husband's business. But mostly female population is busy in domestic and agriculture work and they are only housewives.

### Fertility & Mortality

Birth and death are the two most important social and biological events in man's personal history. These patterns are most significant aspect of the human behaviour for survival of the society.

**Table 6**  
**Educational Status by Age & Sex**

Age Grp. (in yrs)	Illiterate				Literates										
					Jr. High School		High School		Inter-mediate		Graduates		P.G.		
	M	F	Total	%	M	F	M	F	M	F	M	F	M	F	
0-4	16	22	38	6.40	9	14	-	-	-	-	-	-	-	-	-
5-9	2	-	2	0.33	32	20	-	-	-	-	-	-	-	-	-
10-14	-	-	-	-	36	33	-	-	-	-	-	-	-	-	-
15-19	1	3	4	0.67	19	26	10	11	1	2	-	1	-	-	
20-24	3	4	7	1.18	20	15	7	8	3	6	1	3	-	-	
25-29	3	10	13	2.19	10	15	6	3	3	6	4	1	-	-	
30-34	5	9	14	2.36	11	6	7	5	5	1	1	-	-	-	
35-39	4	15	19	3.20	11	3	3	2	-	-	3	-	-	-	
40-44	5	8	13	2.19	5	1	3	2	-	-	-	-	-	-	
45-49	2	8	10	1.68	4	3	1	1	-	-	3	-	-	-	
50-54	6	9	15	2.52	8	-	2	1	-	-	1	-	1	1	
55-59	-	9	9	1.51	-	1	-	-	-	-	-	-	-	-	
60-64	2	3	5	0.84	1	-	1	-	-	-	-	-	-	-	
65-69	1	2	3	0.50	1	-	-	-	-	-	1	-	-	-	
70+	5	5	10	1.68	1	-	-	-	-	-	-	-	-	-	
Total	55	107	162	27.31	168	137	40	33	11	15	14	5	1	2	
% age	9.27	18.04	-	-	28.33	23.10	6.74	5.56	1.85	2.52	2.36	0.84	0.16	0.33	

Literacy- 72.69

**Age at Marriage:** To a very large extent, fertility of a population depends upon the ages at which females marry. Every society has its own norms regarding the age at marriage for the females. In the present sample of Himachaly population the mean age at marriage for the females works at 18-19 years. This means that in Himachaly population child marriage is not practised.

**Marriage and First Pregnancy:** In addition to the study of the age at marriage for understanding the fertility behaviour of the population, the information on interval between the marriage and the first pregnancy is also important for understanding the level of fertility in the initial years of



married life. The distribution of females in respect of the marriage and first pregnancy is given in the table 7 & 8. Table indicates that 19.38% females bear their 1st pregnancy at the age of 18 years. About 13.26% married female have first pregnancy at the age of 21 years. But above 28 years, there is least frequency of first pregnancy. Below 15 years, there are only 3.06% pregnancies are recorded.

**Table 7**  
**Females Age at Marriage at the time of Survey by their Age**

<i>Age of the females</i>	15-24	25-34	35-44	45-54	55-64	65+	Total	% age
Below 15	-	-	-	2	3	2	7	5.3
15	1	3	5	6	7	2	24	18.18
16	2	1	5	4	3	3	18	13.63
17	3	2	4	3	2	1	15	11.36
18	5	10	6	7	1	3	32	24.24
19	4	3	1	-	-	-	8	6.06
20	10	6	2	-	-	-	18	13.63
21	-	3	2	-	-	-	5	3.78
22	-	4	-	-	-	-	4	3.03
23	1	-	-	-	-	-	1	0.75
24	-	-	-	-	-	-	-	-
25	2	-	-	-	-	-	2	1.51
Total	28	32	25	22	16	11	134	-
%	100	-	-	-	-	-	100	-

**Table 8**  
**First Pregnancy by Age of Mother**

<i>Female Age</i>	<i>No. of Female</i>	<i>%age</i>	<i>Cumulative Frequency</i>
Below 15	3	3.06	3.06
15	8	8.16	11.22
16	9	9.18	20.40
17	19	19.38	39.78
18	12	12.24	52.02
19	10	10.20	62.22
20	13	13.26	75.48
21	7	7.14	82.62
22	7	7.14	89.76
23	3	3.06	92.82
24	-	-	-
25	2	2.04	94.86
26	2	2.04	96.90
27	1	1.02	97.92
28	-	2.04	99.96
29	-	-	-
30+	2	-	-
Total	98	59.96	919.02

**Table 9**  
**Distribution of Last Pregnancy by Age of Mother among Himachalies**

<i>Age of Mother</i>	<i>No. of Females</i>	<i>% age</i>
Less than 25	66	66.00
25	5	5.00
26	5	5.00
27	7	7.00
28	4	4.00
29	1	1.00
30	2	2.00
31	1	1.00
32	1	1.00
33	2	2.00
34	2	2.00
35	1	1.00
36	-	-
37	1	1.00
38	-	-
39	-	-
40	1	1.00
41	-	-
42	-	-
43	-	-
44	1	1.00
45+...	-	-
<b>Total</b>	<b>100</b>	<b>100.00</b>

**Inter-pregnancy intervals:** Table 10 represents the inter-pregnancy interval. This is also known as inter-genetic intervals. In the present study the maximum number of pregnancy is found as 271. The pregnancy interval is taken with an interval of 12 months. The highest interval is of 145+... months. The highest number of pregnancy (100) occurs in the group having the interval 13-24 months of interval. The number of pregnancies gradually decreases upto the group having interval from 49 to 60 months.

**Table 10**  
**Inter Pregnancy Intervals**

<i>Percentage gap in months</i>	<i>Number of Pregnancies</i>														<i>Total</i>	<i>% age</i>
	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14			
0-12	62	-	-	-	-	-	-	-	-	-	-	-	-	-	62	24.40
13-24	92	3	-	-	5	-	-	-	-	-	-	-	-	-	100	39.38
25-36	54	-	-	-	-	-	-	-	-	-	-	-	-	-	54	21.25
37-48	23	-	-	-	-	-	-	-	-	-	-	-	-	-	23	9.05
49-60	3	2	-	-	-	-	-	-	-	-	-	-	-	-	5	1.97
61-72	6	-	-	-	-	-	-	-	-	-	-	-	-	-	6	2.37

Percentage gap in months	Number of Pregnancies													Total	% age
	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14		
73-84	2	-	-	-	-	-	-	-	-	-	-	-	-	2	0.78
85-96	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
97-108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
109-120	1	-	-	-	-	-	-	-	-	-	-	-	-	1	0.40
121-132	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
133-144	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
145+ ...	1	-	-	-	-	-	-	-	-	-	-	-	-	1	0.40
Total	244	5	-	-	5	-	-	-	-	-	-	-	-	-	-
Percentage	96.06	1.97	-	-	1.97	-	-	-	-	-	-	-	-	254	100.00

An increase to 6 in the number of pregnancies again recorded in the group having interval from 61 to 72 months.

**Order of Pregnancy by the mother's age:** Table 11 reveals the mother's age with the order of pregnancy. Mother's age is divided into an interval of two years. Individuals below the age of 15 & above the age of 45 years put in the first and last respectively. The highest order of pregnancies recorded at the age of 18-20 years. The highest number of births recorded in the first order. Thus we see that as the birth order is increased, the number of births is decreased gradually. The lowest number of pregnancies have been recorded at the age of 33 to 38 years in the 7 order. The pregnancies of still births are highest to the mothers of the age group 21-23 years in the 1<sup>st</sup> order.

**Total Fertility History:** It is well known that selection occurs when carriers of some gene variants have more or fewer surviving descendants relating to the carriers of other variants, or natural selection is differential perpetuation of genetic variants from the generation to generation. Thus the phenomenon of birth wastage, still birth and sterility becomes significant from both the demographic as well as biological view point, because they have a direct bearing on the genetic structure of the future population, by determining the loss or continued survival of certain genotypes and their subsequent influence on the genetic structure of the population.

There is a total of 271 pregnancies by 98 married Himachalies females, in which 254 children were alive, at the time of survey. There were two still births & 8 abortions that are recorded. This figure refers the reproductive wastage. Frequency of still births is highest to the mothers of the age group of 21-23 years in the 1st pregnancy order.

Table 12 represents the total reproductive performance of sample females.

**Table 11**  
**Order of Pregnancy Distribution by the Mothers' Age among Himachalies**

Order of Pregnancy	Age of Mother														Total	% age
	Below 15	15-17	18-20	21-23	24-26	27-29	30-32	33-35	36-38	39-41	42-44	45+	Total	% age		
1	-	20	42	22(2)	7	3	2	-	-	-	-	-	-	98	38.58	
2	-	3	25	28	12	5	5	-	-	-	-	1	79	31.10		
3	-	1	3	17	15	4	4	2	-	-	-	-	46	18.12		
4	-	-	1	5	6	3	2	3	-	1	-	-	21	8.27		
5	-	-	-	1	1	2	2	1	-	-	-	-	7	2.75		
6	-	-	-	-	1	-	-	1	-	-	-	-	3	1.18		
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Total	-	24	71	73	72	17	15	7	1	1	-	1	254	100.00		

**Table 12**  
**Total Fertility History**

Total live birth = 261		Reproductive wastage				
Male	Alive Female	Dead	Twin Births	Still Births	Abortions	
125	129	7	-	2	8	
49.22	50.79	2.75	-	0.79	3.15	

### Measures of Fertility

To draw some conclusions from the collected data and to provide a generalized form, it is essential to make some measures of fertility and mortality. These are as follows:

1. **Child Women Ratio:** Child women ratio is an indirect measure of fertility obtained by retailing the number of children in a community to women of the child bearing age. Usually the number of children enumerated in the 0 to 14 years' age group is related to the number of women in the age group of 15 to 44. Child women, as it is customary term is the number of women in the age group of 15 to 44. The child women ratio is used for comparing the levels of fertility.

$$= 61 \times 1000 / 128$$

$$= 476.56 \text{ per } 1000$$

2. **Crude Birth Rate (C.B.R.):** Crude birth rate is the number of yearly births per 1000 total population.

$$= \text{Annual no. of births} \times 1000 / \text{Annual Population}$$

$$= 17 \times 1000 / 593$$

$$= 28.66 \text{ per } 1000$$

3. **General Fertility Rates (G.F.R.):**

$$= 17 \times 1000 / 128$$

$$= 132.81 \text{ per } 1000$$

4. **Still Birth Rate:** This is obtained by dividing the total number of still births by the total number of pregnancies and multiplying it by 1000.

$$= \text{No. of still births} \times 1000 / \text{Total pregnancies}$$

$$= 2 \times 1000 / 271$$

$$= 7.38 \text{ per } 1000$$

5. **Abortion Rate:** Computed by relating the total number of abortions that have occurred to the married females per 1000 total pregnancies:

$$\begin{aligned}
 &= \text{No. of abortions} \times 1000 / \text{Total pregnancies} \\
 &= 8 \times 1000 / 271 \\
 &= 29.52 \text{ per } 1000
 \end{aligned}$$

### Morbidity

Table 13 represents the morbidity by age and sex. These are more significant demographic variables affecting morbidity patterns. This table reveals the history of total morbidity during at the time of survey. From the table, it is clear that there is high percentage of disease occurrence in the male (52.95%) comparison to females (47.06%).

**Table 13**  
**Morbidity Record During the Survey**

<i>Morbidity</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>	<i>%age</i>
Fever, Cough & Cold	-	2	2	5.87
Asthma	1	2	3	8.83
Tuberculosis	4	-	4	11.77
Gall Bladder Stone	1	1	2	5.87
Cancer	2	1	3	8.83
Heart Disease	1	1	2	5.87
Paralysis	-	1	1	2.95
Diabetes	2	1	3	8.83
Blood Pressure	3	3	6	17.65
Other	4	4	8	23.53
Total	18	16	34	-
%age	52.95	47.06	-	100.00

### Mortality

Table 14 represents the mortality by age and sex. These are more significant demographic variables affecting mortality patterns. This table reveals the history of total deaths during the last ten years from the time of survey. From the table it is clear that there is high percentage of death occurring at the age above 65 years, which is merely due to old age. 10.34% infant mortality is recorded.

Table 15 would reveals that the death from a given disease is another measure of mortality. It is helpful both in evaluating the effectiveness of the health work and also in indicating the direction in which the extension of health services is most needed. Causewise deaths during the last 10 years from the time of survey is given in table 12. Heart disease is the main cause of deaths and other factors of mortality are cough, cold, Asthma and Cancer.

**Table 14**  
**Distribution of Mortality by Age & Sex**  
**(During the last 10 yrs form the time of Survey)**

<i>Age group (yrs)</i>	<i>No. of male died</i>	<i>% age of male</i>	<i>No. of female died</i>	<i>% of female</i>	<i>Total</i>	<i>% age</i>
0-1	2	6.89	1	3.44	3	10.34
2-5	-	-	1	3.44	1	3.45
6-9	-	-	-			
10-14						
15-19						
20-24	2	6.89			2	3.90
25-29	1	3.44			1	3.45
30-34						
35-39						
40-44						
45-49						
50-54	2	6.89	1	3.44	3	10.34
55-59	2	6.89	2	6.89	4	13.79
60-64	4	13.79	1	3.44	5	17.24
65+ ...	5	17.24	5	17.24	10	34.49
<b>Total</b>	<b>18</b>	<b>62.03</b>	<b>11</b>	<b>37.89</b>	<b>29</b>	<b>100.00</b>

**Table 15**  
**Mortality Causes**

<i>Sl. No.</i>	<i>Causes of Mortality</i>	<i>No. of Deaths</i>	<i>Percentage</i>
1.	Still Birth	2	6.90
2.	Cough & Cold	3	10.35
3.	Asthma	3	10.35
4.	Cancer	3	10.35
5.	Heart Disease	5	17.23
6.	Jaundice	2	6.90
7.	Accident	2	6.90
8.	Unknown causes	6	20.67
9.	Other	3	10.35
	<b>Total</b>	<b>29</b>	<b>100.00</b>

## Conclusion

Thus, the foregoing analysis & discussion points out (results) to the conclusions that the Himachaly population comprises 48.67% males & 50.49% females. As for as agewise distribution of population is concerned proportions of individual also in the age group 10-14 years is highest. The larger number of children in the learning age group indicates that there are better chances of improvement in comparison to the former generation. The

**Table 16**  
**Number of Deaths during Last year**  
**(From the time of Survey)**

<i>Age group</i>	<i>No. of Male</i>	<i>No. of Female</i>	<i>Total Deaths</i>
0-4	-	-	-
5-24	-	-	-
25-44	-	-	-
45-64	2	-	2
65+...	1	2	3
Total	3	2	5
%age	60.00	40.00	100.00

dependency ratio 55.64 is too low which means population to be quite adult and more persons in working age groups.

The household composition indicates that the highest frequency of Himachalies houses is 26.66% which consists of four members. There is largest frequency of nuclear family occurrence 63.33%. But extended and joint families are also numerous. Among Himachalies child marriage is not practiced. Mean age of marriage among females is 18-19 yrs. In 593 souls 51.20% population is married & 44.65% is unmarried. Widow marriage is not known in Himachalies. (Table 3) Among them monogamy is most frequent however 6 cases of bigamy and one case of polygamy are also present. The highest frequency of couple reported is one couple per house. This indicates that the trend of Joint family is not existing among the Himachalies. Rate of Literacy among Himachalies is high (72.69%) and maximum education level is Junior High School. Although males & females both have equal opportunities of education but the percentage of girls attaining education in Inter and Post Graduate is higher as compare to that of boys.

Main occupation of population understudy is business. They are mainly woollen cloth merchants & hotel owners but high proportion of working population is busy in labour work. Females are housewives and mostly engaged in the domestic & agriculture work. The highest frequency of 1<sup>st</sup> pregnancy occurs at the 18 year of age and the lowest at the age 35 years. In time interval between two successive pregnancies, the maximum number of pregnancies (92) are reported to have occurred between 13 to 24 months. The infant mortality is not high in the population. It is only 10.34% where as mortality rate is highest at the age of 65<sup>+</sup> (34.49%). The main diseases due to which the deaths is caused during the last 10 years from the time of survey are heart disease, whereas infant mortality occurs mainly due to birth infections, cough & cold. On the basis of data in a calendar year 2004 the Crude Birth Rate = 28.66, General Fertility Rate = 732.81, Child Women Ratio



= 476.56, Still birth rate = 7.38 & abortion rate = 29.52 (per 1000 Himachalies) have been calculated. Endogenous death rate & Exogenous death rate also have been calculated in which Endogenous Death Rate is higher (0.03) than the Exogenous Death Rate (0.01). Hence it may be concluded that the Male mortality rate is high (10.38) in comparison to the female (6.57) per 1000 live births. Crude Death Rate is 8.44 per 1000 & rate of natural increase is 20.22 per 1000.

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